

161. A method of determining whether each asynchronous process in an original set of asynchronous processes should or should not be converted into a new periodic process and included in a set of periodic processes that will be mapped to time slots in a pre-run-time schedule,

each asynchronous process in said original set of asynchronous processes has predetermined asynchronous process constraints comprising worst-case computation time, deadline, and minimum time between two consecutive requests constraints,

each periodic process in said set of periodic processes has predetermined periodic process constraints comprising permitted range of offset, worst-case computation time, deadline, period constraints,

each new periodic process has new periodic process constraints comprising permitted range of offset, worst-case computation time, deadline, period constraints, said method steps comprising:

(A)

selecting one asynchronous process in said original set of asynchronous processes,

- (1) tentatively converting said one asynchronous process into a corresponding new periodic process, such that said asynchronous process constraints of said one asynchronous process will be satisfied by said new periodic process constraints of said corresponding new periodic process,
- (2) calculating a first processor capacity which is required to be reserved if said one asynchronous process is not converted,
- (3) calculating a second processor capacity which is required to be reserved if said one asynchronous process is converted,
- (4) including a copy of said one asynchronous process in a second set of asynchronous processes if the ratio of said first processor capacity to said second processor capacity exceeds a predetermined threshold, otherwise including said tentatively converted corresponding new periodic process in said set of periodic processes,

(B)

repeating A until every asynchronous processes in said original set of asynchronous processes has been selected,